

RICE CREEK, PUTNAM COUNTY, FLA.

LETTER

FROM

THE SECRETARY OF THE ARMY

TRANSMITTING

A LETTER FROM THE CHIEF OF ENGINEERS, UNITED STATES ARMY, DATED JANUARY 14, 1952, SUBMITTING A REPORT, TOGETHER WITH ACCOMPANYING PAPERS AND AN ILLUSTRATION, ON A PRELIMINARY EXAMINATION AND SURVEY OF RICE CREEK, PUTNAM COUNTY, FLA., AUTHORIZED BY THE RIVER AND HARBOR ACT APPROVED ON JULY 24, 1946

APRIL 30, 1952.—Referred to the Committee on Public Works and ordered to be printed with one illustration

LETTER OF TRANSMITTAL

DEPARTMENT OF THE ARMY,
Washington 25, D. C., April 25, 1952.

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEAR MR. SPEAKER: I am transmitting herewith a report dated January 14, 1952, from the Chief of Engineers, United States Army, together with accompanying papers and an illustration, on a preliminary examination and survey of Rice Creek, Putnam County, Fla., authorized by the River and Harbor Act approved on July 24, 1946.

In accordance with section 1 of Public Law 14, Seventy-ninth Congress, the views of the State of Florida are set forth in the enclosed communication.

The Bureau of the Budget notes that the major part of the estimated benefits would accrue to a single corporation, and, although the project, as recommended, would require the corporation to contribute 50 percent of the cost of the modification, it comments on the fact that no requirement is specified for adoption of remedial

measures in alleviating pollution or contributing to the maintenance of the main channel. The Bureau of the Budget further states that the President has questioned seriously the policy of Federal improvement of waterways when the benefits accrue to a single corporation. While the Bureau of the Budget considers that authorization of the proposed improvement or submission of requests for appropriations for construction, unless its contribution to defense can be clearly demonstrated, would not be in accord with the program of the President, it also states that there would be no objection to submission of the report to Congress. The complete views of the Bureau of the Budget are contained in the attached copy of its letter.

Sincerely yours,

FRANK PACE, Jr.,
Secretary of the Army.

COMMENTS OF THE BUREAU OF THE BUDGET

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington 25, D. C., February 19, 1952.

The honorable the SECRETARY OF THE ARMY,

(Through the Budget Officer for the Secretary of the Army.)

MY DEAR MR. SECRETARY: Receipt is acknowledged of your letter, dated January 24, 1952, submitting the proposed report on Rice Creek, Putnam County, Fla., authorized by the River and Harbor Act approved July 24, 1946.

The Chief of Engineers recommends the provision of a channel from the St. Johns River to the mouth of Rice Creek, improvement of Rice Creek to the access channel of the Hudson Pulp & Paper Corp., including a cut-off, suitable straightening, widening, and snagging, at a total estimated first cost of \$139,150, including \$1,800 for aids to navigation and \$1,050 for lands. Local interests will be required to contribute 50 percent of the cost of constructing the channel, an amount presently estimated as \$68,150, and to maintain the access channel and turning basin at the paper mill to project depth. On the basis of estimated annual benefits of \$23,400 and estimated annual charges of \$6,530, the resulting benefit-cost ratio is 3.58.

It is noted that local interests justify the improvement on the basis that it would be beneficial to general business in the area and to owners of pulp timber along the river which could not be economically marketed by land transportation and would result in substantial savings in transportation costs for in-bound movements of supplies to the paper mill and out-bound movements of finished products. The report also states that there are no public piers or wharves along Rice Creek and there are no foreseeable needs for any. Lands bordering the stream are stated to be generally uninhabited and unsuitable for terminal facilities. All of the evaluated benefits are based on shipping to and from the Hudson Pulp & Paper Corp.

The report also indicates that several letters have been received from the Fish and Wildlife Service advising that gross pollution from

the pulp and paper plant has resulted in deterioration of fishery habitat and threatens fishery resources of the St. Johns River. In its letter dated August 19, 1948, this agency states:

We are opposed in principle to the expenditure of Federal funds on a project that would benefit an industry which, in turn, is destroying natural resources through its operations. There is reasonable evidence in this case that remedial measures, as recommended in the report of the Florida State Board of Health, would at least alleviate the effects of pollution from the pulp and paper mill in question. We, therefore, recommend that if possible the development of Rice Creek navigation if approved by your agency be made contingent upon adoption by the Hudson Pulp and Paper Corporation of the recommendations of the Florida State Board of Health as a local contribution to the project.

No requirement concerning the Hudson Pulp & Paper Corp.'s co-operation in the adoption of remedial measures to alleviate pollution has been included in the local contributions recommended.

The report of the Chief of Engineers recognizes the fact that the major part of the estimated benefits would accrue to a single corporation but states that these benefits would have somewhat of a general aspect based on the assumption that any savings in transportation costs would be distributed to consumers of the products through lower selling prices. There is little assurance, however, that the benefits would be passed on to the public in the manner assumed. As stated in our letters October 20, 1944, and December 2, 1948, on Agate Bay Harbor, Minn., and Detroit River, Mich., respectively, the President has questioned seriously the policy of Federal improvement of waterways when the benefits accrue to a single organization. While the Hudson Pulp & Paper Corp. will be required to contribute 50 percent of the cost of constructing the channel, it will not be required to make any contribution toward the maintenance of the main channel nor to cooperate in the provision of remedial measures designed to alleviate pollution.

In consideration of the above comments, I am authorized by the Director of the Bureau of the Budget to advise you that, while there would be no objection to the submission of the report to Congress, on the basis of the information now available to us, authorization of the proposed improvement to Rice Creek would not be in accord with the program of the President.

In any case, regardless of the action that may be taken by the Congress on authorization of this project, submission of requests for appropriations for construction would not be in accord with the program of the President unless it can be clearly demonstrated that the work will provide an immediate contribution to the requirements of the defense effort or essential civilian economy.

Sincerely yours,

WM. F. McCANDLESS,
Assistant Director for Estimates.

COMMENTS OF THE STATE OF FLORIDA

STATE OF FLORIDA STATE BOARD OF CONSERVATION,
DIVISION OF WATER SURVEY AND RESEARCH,
OFFICE OF THE CHIEF ENGINEER,
Tallahassee, Fla., January 7, 1952.

Lt. Gen. LEWIS A. PICK,
The Chief of Engineers, United States Army,
Washington 25, D. C.

MY DEAR GENERAL PICK: In accordance with your request of December 27, 1951, this office has reviewed, for the State of Florida, your proposed report on a preliminary examination and survey of Rice Creek, Putnam County, Fla., for improvement of the channel in the interests of navigation.

The State of Florida finds this project economically feasible and highly desirable. We concur therefore with your conclusions and recommendations, and urge the early authorization and construction of the proposed work.

Respectfully,

A. G. MATTHEWS,
Colonel, United States Army, Retired,
Chief Engineer.

REPORT OF THE CHIEF OF ENGINEERS, UNITED STATES ARMY

DEPARTMENT OF THE ARMY,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington 25, D. C., January 14, 1952.

Subject: Rice Creek, Putnam County, Fla.

To: The Secretary of the Army.

1. I submit for transmission to Congress my report with accompanying papers on preliminary examination and survey of Rice Creek, Putnam County, Fla., authorized by the River and Harbor Act approved July 24, 1946.

2. Rice Creek rises in north-central Putnam County, Fla., flows easterly about 10 miles through generally low, swampy, and densely forested lands, and discharges into St. Johns River at a point about 3.5 miles north of Palatka and 43 miles south of Jacksonville, Fla. The creek is 200 feet wide from St. Johns River to mile 2.2 and thence about 80 feet wide to mile 2.6. At this point an access channel 10 feet deep, 90 feet wide, and 1,400 feet long has been excavated by the Hudson Pulp & Paper Corp. to a turning basin of like depth at their paper mill south of Rice Creek. The creek is crooked and the section between mile 2.2 and the access channel is partially obstructed by logs, overhanging trees, and debris. Channel depths in the navigable portion of the stream vary from 10 to 40 feet. The controlling depth across the bar at the mouth is 6.6 feet. The mean tidal range is about 1.2 feet. There is no Federal project for the improvement of Rice Creek. The completed existing project for St. Johns River, Fla., Jacksonville to Lake Harney, furnishes a channel 13 feet deep and 200 feet wide from Jacksonville to Palatka, thence 12 feet deep and 100 feet wide to Sanford with lesser depths beyond, and side channels to Enterprise and Hastings Landing. The Hudson Pulp &

Paper Corp. has provided 300 feet of marginal berthing space at their turning basin which is open to all on equal terms. There are no public piers or wharves along Rice Creek. One railroad bridge and one highway bridge cross the section of Rice Creek under consideration. Both bridges, constructed under War Department permits, have manually operated swing spans. The maximum horizontal clearance of 32 feet through the railroad bridge and the very sharp bends in the creek adjacent to the highway bridge restrict use of the creek to small barges.

3. The area commercially tributary to Rice Creek includes portions of Clay, Putnam, St. Johns, Flagler, Marion, Lake, Volusia, Orange, and Seminole Counties, Fla., and the port of Jacksonville. The entire permanent population of these counties was about 285,000 in 1945. In that year the populations of Putnam County and Palatka, its county seat, were about 18,600 and 7,000, respectively. Within the area, citrus fruits, vegetables, melons, potatoes, hay, and other crops are produced on about 690,000 acres. The remaining 3,742,000 acres are mostly wooded. The local forest products are pulpwood, lumber, veneer, cross ties, poles, and naval stores. Prior to 1947 the commerce on Rice Creek consisted of rafted logs, a few recreational fishing boats, a few out-bound barges of pulpwood, and some in-bound barges of construction equipment. After the paper mill on Rice Creek began operations in November 1947, fuel oil has been barged to the mill. Oil shipments totaled 25,577 tons in the year ending November 1948. During 1947, 17 round trips were made by tugs and barges having drafts of 6 to 8 feet and 16 round trips by small fishing, recreational, and Government craft.

4. Local interests desire improvement of Rice Creek from the project channel in St. Johns River to the access channel of the paper mill by snagging, deepening, and straightening, and by increasing the horizontal clearance at the railroad bridge to provide a safe navigable waterway for tugs and barges drawing up to 10 feet and barges having widths up to 35 feet. They claim that the improvement would be beneficial to general business in Putnam County and to owners of pulpwood timber along St. Johns River which could not be economically marketed by land transportation, and would result in substantial savings in transportation costs for supplies, raw materials, and the products of the paper mill. They state that the daily capacity of the paper mill is 150 tons of finished products and that the addition of a second unit of similar capacity is planned.

5. The district engineer finds that insufficient depths, excessive bends, snags, and restrictive bridge clearances interfere with present and prospective commerce. He has developed a plan of improvement which provides for a channel 12 feet deep and 100 feet wide from beacon No. 64 in the St. Johns River to the mouth of Rice Creek and thence 75 feet wide, except through the bridges, to the access channel of the Hudson Pulp & Paper Corp., with a widened east approach to the highway bridge and a land cut-off west of the highway bridge. The district engineer states that action has been taken to have the horizontal clearance through the railroad bridge increased. The district engineer estimates the first cost of the improvement, based on 1948 price levels, to be \$139,150 including \$1,800 for aids to navigation and \$1,050 for lands, and the annual carrying charges to be \$6,530, of which \$3,568 would be Federal, including annual maintenance charges

of \$600 for dredging and \$250 for navigation aids. He estimates the average annual savings in transportation costs to the paper mill at \$23,400, consisting of \$18,200 on a movement of 65,000 tons of pulpwood and of \$5,200 on 26,000 tons of fuel oil. The benefit-cost ratio is 3.58. The district engineer also finds that, while a major part of the estimated benefits would accrue to a single corporation, these benefits have a somewhat general aspect. The finished products of the mill enter a highly competitive market and any savings in transportation costs would be reflected to some degree in lower selling prices to meet competition and thus be widely distributed among all consumers of the products. The purchase of pulpwood from areas presently economically inaccessible would benefit the general public through increasing the utilization of natural resources. The district engineer concludes that the nature of the plan and the large proportion of local benefits are such that local interests should contribute one-half of the cost of construction, not to exceed \$68,150, as well as furnish all lands, easements, rights-of-way, and spoil areas for the initial work and subsequent maintenance, and hold and save the United States free from damages due to the construction and maintenance of the project. Local interests agreed to cooperate but informed the district engineer that they were not willing to contribute any cash toward the cost of construction. Since local interests were not willing to contribute any part of the cost of construction and the district engineer feels that Federal provision of the improvement is not justified on the basis of general benefits alone, he recommends that the United States undertake no improvement of Rice Creek, Putnam County, Fla., at this time. The division engineer concurs.

6. Local interests were notified of the nature of the reports of the district and division engineers and were given an opportunity to present additional information to the Board. At a hearing held by the Board at their request, local interests presented data in support of their claims of additional benefits of a general character to be expected from the project and urged its construction without local cash contribution. They cited their contributions to navigation from the provision of the access channel and turning basin, and removal of the restrictive railroad bridge fender. Subsequently, local interests informed the Board that they are now willing to contribute in cash one-half of the cost of construction and to cooperate otherwise. Accordingly, the Board recommends improvement of Rice Creek, Fla., generally in accordance with the plans of the district engineer at an estimated cost to the United States of \$68,150 for construction and \$600 annually for maintenance, subject to certain conditions of local cooperation.

7. After due consideration of these reports, I concur in the views of the Board and accordingly recommend the improvement of Rice Creek, Fla., to provide a channel 12 feet deep and 100 feet wide from beacon No. 64 in the St. Johns River to the mouth of Rice Creek, and thence 75 feet wide to the access channel of the Hudson Pulp & Paper Corp. except through the railroad and highway bridges, including a cut-off and suitable straightening, widening, and snagging, generally in accordance with the plans of the district engineer and with such modifications thereof as in the discretion of the Chief of Engineers may be advisable; at an estimated cost so the United States of \$68,150 for construction and \$600 annually for maintenance, provided local

interests agree to (a) contribute in cash 50 percent of the cost of constructing the channel, presently estimated to be \$68,150; (b) furnish without cost to the United States all lands, easements, rights-of-way, and suitable spoil-disposal areas necessary for initial construction, and for subsequent maintenance when and as required; (c) hold and save the United States free from damages due to construction and maintenance of the improvement; and (d) maintain the access channel and turning basin at the paper mill to project depth.

LEWIS A. PICK,
*Lieutenant General,
Chief of Engineers.*

REPORT OF THE BOARD OF ENGINEERS FOR RIVERS
AND HARBORS

[Second endorsement]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
Washington 25, D. C., October 30, 1951.

To: The Chief of Engineers, United States Army.

1. Local interests were notified of the nature of the reports of the district and division engineers and were given an opportunity to present additional information to the Board. At a hearing held by the Board at their request, local interests expressed their desire that the district engineer's plan of improvement be provided entirely at Federal expense. They claimed that similar improvements had been made by the Federal Government for several of their competitors without requiring any contribution; that many benefits of a general nature would accrue from the improvement to suppliers, consumers, plant employees, the town, county, and State; that they had already made large contributions to navigation by dredging a channel and basin and by entering into a contract for the replacement of the obstructive fender system at the railroad bridge at their expense; that, if the improvement were provided, they would need to enlarge their basin and terminal facilities and provide lands and rights-of-way at a cost in excess of that estimated by the district engineer; and that the Hudson Pulp & Paper Corp. was unable at this time to finance further expenditures for this improvement. However, this corporation later informed the Board that they are willing to contribute one-half of the cost of the construction and to cooperate otherwise. The Board considers the improvement a suitable one for Federal participation on the basis that local interests contribute, in cash, one-half of the cost of construction in addition to meeting the customary requirements of local cooperation.

2. The Board therefore recommends the improvement of Rice Creek, Fla., to provide a channel 12 feet deep and 100 feet wide from beacon No. 64 in the St. Johns River to the mouth of Rice Creek, and thence 75 feet wide to the access channel of the Hudson Pulp & Paper Corp. except through the railroad and highway bridges, including a cut-off and suitable straightening, widening, and snagging, generally in accordance with the plans of the district engineer and with such modifications thereof as in the discretion of the Chief of Engineers may be advisable; at an estimated cost to the United

States of \$68,150 for construction and \$600 annually for maintenance, provided local interests agree to (a) contribute in cash 50 percent of the cost of constructing the channel, presently estimated to be \$68,150; (b) furnish without cost to the United States all lands, easements, rights-of-way, and suitable spoil-disposal areas necessary for initial construction, and for subsequent maintenance when and as required; (c) hold and save the United States free from damages due to construction and maintenance of the improvement; and (d) maintain the access channel and turning basin at the paper mill to project depth.

For the Board:

G. J. NOLD,
Major General,
Chairman.

REPORT OF THE DISTRICT ENGINEER

SURVEY REPORT ON RICE CREEK, PUTNAM COUNTY, FLA.

SYLLABUS

Local interests in Putnam County, Fla., request that the United States provide a safe navigable barge channel from the St. Johns River into and up Rice Creek to the access channel of the Hudson Pulp & Paper Corp. The district engineer finds that a channel 12 feet deep and 100 feet wide from beacon 64 in the St. Johns River to the mouth of Rice Creek and thence generally 75 feet wide to the access channel of the Hudson Pulp & Paper Corp. would be adequate for present and prospective vessel traffic; that the nature of the plan and large proportion of local benefits are such that local interests should contribute one-half the cost of construction, not to exceed \$68,150, and cooperate otherwise; that since local interests have not indicated that they are willing to contribute any part of the cost of construction, they cannot be expected to do so; and that Federal provision of the improvement is not justified on the basis of general benefits alone. The district engineer therefore recommends that the United States undertake no improvement of Rice Creek, Putnam County, Fla., at this time.

DEPARTMENT OF THE ARMY,
CORPS OF ENGINEERS,
OFFICE OF THE DISTRICT ENGINEER,
Jacksonville, Fla., December 15, 1948.

Subject: Survey report on Rice Creek, Putnam County, Fla.

Through: The division engineer, South Atlantic Division, Atlanta, Ga.

To: The Chief of Engineers, Department of the Army, Washington, D. C.

AUTHORITY

1. This report is submitted in compliance with an item in section 7 of the River and Harbor Act approved July 24, 1946 (Public Law 525, 79th Cong., 2d sess.), calling for a preliminary examination and survey of Rice Creek, Putnam County, Fla. Preliminary-examination reports were submitted by the district and division engineers on April 25 and May 21, 1947, respectively, and were reviewed by the Board of Engineers for Rivers and Harbors, which recommended a survey.

SCOPE OF SURVEY

2. A survey to determine the advisability and cost of improvement and the local cooperation required was authorized by the Chief of Engineers on July 8, 1947. The duty of making the survey was assigned to the district engineer by first endorsement, office, division engineer, South Atlantic Division, Atlanta, Ga., dated July 15, 1947.

3. The field investigations for this report included topographic, hydrographic, and economic surveys, and general inspections of the locality. The topographic and hydrographic surveys, made in September 1947, included soundings and probings from the St. Johns River to and up Rice Creek to the access channel and basin of the Hudson Pulp & Paper Corp., and the location of bridges, bank lines, and docks. The creek channel and possible cut-offs were surveyed. Economic studies included personal interviews with paper-mill officials, barge operators, fuel-oil suppliers, and bridge tenders to obtain data on present commerce and navigation difficulties, for use in estimating prospective commerce and benefits and for determining the most practicable alinement for improvement. Related office studies included preparation of comparative cost estimates, checking and verifying field data, and computations of possible benefits for the plans studied.

DESCRIPTION

4. Rice Creek, a tributary of St. Johns River, rises in north-central Putnam County, Fla., about 12 miles northwesterly of Palatka, Fla., the county seat, and flows easterly about 10 miles to empty into the St. Johns River about 3.5 miles north of Palatka and 52 miles south of Jacksonville, Fla. The banks of the creek and adjacent lands are generally low and swampy, subject to tidal and flood overflow, and thickly covered with brush and large trees which overhang the stream. The drainage basin contains about 320 square miles of predominantly wooded and pasture land in Putnam and Clay Counties.

5. The entrance to Rice Creek is partially obstructed by sand shoals in St. Johns River, over which the controlling depth is 6.6 feet. About 2.2 miles above the mouth, Etonia Creek, the principal tributary, joins Rice Creek from the northwest, and 0.4 mile above that, a privately dug access channel about 10 feet deep and 90 feet wide extends southerly from the creek to the turning basin of the Hudson Pulp & Paper Corp. paper mill. From its mouth to Etonia Creek, Rice Creek is generally 200 feet wide; thence to the access channel it is about 80 feet wide. Channel depths range from 10 to 40 feet, with general depths of about 14 to 20 feet. The creek is crooked with very sharp bends in the vicinity of the United States Highway 17 bridge, about 1 mile above the mouth.

6. The mean tidal range at the mouth of Rice Creek is about 1.2 feet; the spring range about 1.4 feet. Tides force brackish water up the creek about 6 miles. Winds have little effect on the water level in the creek. The maximum known flood range, as estimated by residents, was 5.6 feet at the Atlantic Coast Line Railroad bridge, about 0.8 mile above the mouth; maximum flood velocities are estimated by residents at about 4 miles an hour. The only recorded discharge measurements of Rice Creek were made by the United States

Geological Survey on January 3 and 4, 1946. The maximum measured discharge was 1,800 cubic feet per second at United States Highway 17. The measurement was made on an ebb tide during a recession of flow following heavy rains.

7. There has been no prior report on Rice Creek, no Federal project has been adopted for its improvement, and there has been no prescribed local cooperation. The completed existing project for St. Johns River, Fla., Jacksonville to Lake Harney, to which Rice Creek is tributary, has provided a channel 13 feet deep and 200 feet wide from Jacksonville to Palatka, thence 12 feet deep and 100 feet wide to Sanford, with a channel of like dimensions to Enterprise, and thence 5 feet deep and 100 feet wide to Lake Harney, with a cut-off channel 5 feet deep and 75 feet wide between Lake Monroe and the vicinity of Osteen Bridge.

8. The principal features of Rice Creek and adjacent territory are shown on United States Coast and Geodetic Survey Chart No. 686, and on the accompanying map.

TRIBUTARY AREA

9. The area commercially tributary to barge traffic on Rice Creek includes the port of Jacksonville and parts of Clay, Putnam, St. Johns, Flagler, Marion, Lake, Volusia, Orange, and Seminole Counties, Fla., from which pulpwood could be economically transported to the paper mill recently constructed near the creek. According to State census publications, the permanent population of those counties in 1945 was about 285,000. The 1945 populations of Putnam County and of Palatka, the nearest town, were about 18,600 and 7,000, respectively.

10. From data published by the State department of agriculture and the Florida Forest and Park Service, it is estimated that about 16 percent of the area, or 690,000 acres, is used for agricultural production and that the remainder, 3,742,000 acres, is mostly wooded. The principal crops are citrus fruits, vegetables, melons, potatoes, and hay. Forest products are primarily pulpwood, lumber, veneer, cross ties, poles, and naval stores. Very little of the production, except pulpwood, moves from the area by water, nor would it contribute to commerce on Rice Creek. The pulpwood production for 1947 is estimated at 200,000 tons, part of which in recent years moved by water to a paper mill at Fernandina, Fla. The principal consumer commodities are petroleum products, fertilizer and fertilizer materials, and general merchandise, practically all of which except petroleum products, part of which moves by water, is received by rail and truck.

11. The area is served by four trunk-line railroads, four arterial highways, and many interconnecting roads.

BRIDGES

12. One railroad bridge and one highway bridge cross the part of Rice Creek under consideration. Both bridges have manually operated swing spans, and were built under War Department permits. New concrete rest piers, for a lengthened railroad span, were constructed in 1930. The old concrete rest piers, now landward of the side fenders, have been cut to approximate water level. Steps have

been taken with a view to having the old piers removed to increase the horizontal clearance through the bridge. Information on the bridges is given in table 1.

TABLE 1.—*Bridges*

Miles above mouth	Owner	Clearance (feet)			Date com- pleted
		Vertical above mean low water	Horizontal		
			Right	Left	
0.8	Atlantic Coast Line R. R. -----	4.5	30.5	32.0	1 1930
1.0	State road department -----	10.0	41.7	41.0	1930

¹ Originally constructed by the Tampa and Key West Railroad Co. in 1899, and reconstructed by present owner.

OTHER IMPROVEMENTS

13. No navigation improvements have been made in Rice Creek proper. In 1946, the Hudson Pulp & Paper Corp. dug a triangular turning basin at the paper mill dock and an access channel connecting it with Rice Creek. The channel, about 1,400 feet long, 90 feet wide at bottom, and 120 feet wide at top, and the basin were dug by clam-shell and a hydraulic dredge to a depth of about 10 feet at a cost of about \$40,000.

TERMINAL AND TRANSFER FACILITIES

14. There are no public piers or wharves along Rice Creek, and there is no foreseeable need for any. Lands bordering the stream are generally uninhabited and unsuitable for terminal facilities.

15. A steel-sheet-pile and timber bulkhead at the head of the Hudson Pulp & Paper Corp. turning basin and access channel affords about 300 feet of marginal berthing space. A mobile railroad crane is available for handling freight. Controlling depth at the bulkhead is about 10 feet. The basin has connections with a highway, the Atlantic Coast Line Railroad, Georgia Southern & Florida Railway, and the port of Jacksonville through Rice Creek and St. Johns River. The basin is open to all on equal terms and is adequate for present and prospective commerce. Ample space is available for future terminal expansion on Rice Creek and at the paper mill.

IMPROVEMENT DESIRED

16. A public hearing was held in Palatka, Fla., on January 15, 1947. About 15 persons attended, including county officials, representatives of the Putnam County Chamber of Commerce, the town of Palatka, State road department, Hudson Pulp & Paper Corp., railroads, oil companies, and others. A record of the hearing accompanied the preliminary examination report.

17. Local interests, represented by the Putnam County Chamber of Commerce, county officials, and others, requested that the United States so improve Rice Creek as to provide a safe navigable waterway from the project channel in St. Johns River to the access channel of the Hudson Pulp & Paper Corp. Representatives of the paper

corporation, suppliers of fuel oil, and towing companies desire that the sharp bends in the creek be eased or straightened and that the horizontal clearance through the Atlantic Coast Line Railroad bridge be increased to provide for the passage of a tow of three barges in tandem, each not less than 30 feet wide and 80 feet long, and with loaded drafts of about 10 feet. The Gulf-Atlantic Transportation Co. suggests that the shoals at the mouth of the creek be deepened, the channel improved, and the horizontal clearance of the Atlantic Coast Line Railroad bridge increased to permit passage of a barge at least 35 feet wide and with a draft of 10 feet. The Eastern Seaboard Petroleum Co., Inc., states that the channel should be at least 12 feet deep and 75 feet wide and that the horizontal clearance through the railroad bridge should be increased to 35 feet for its barges, which are 32 feet wide and 140 to 160 feet long, with loaded drafts of 10 feet. Steps have subsequently been taken toward having the horizontal clearance through the railroad bridge increased (par. 12); therefore, the costs and benefits for that work do not enter into this report.

18. The principal arguments advanced in justification of the improvement were that it would (1) be beneficial to general business in Putnam County, and to owners of pulpwood timber along the St. Johns River which could not be economically marketed by land transportation; and (2) result in substantial savings in transportation costs for in-bound movements of supplies to the paper mill and out-bound movements of finished products.

19. Officials of the Hudson Pulp & Paper Corp. stated at the hearing that the daily capacity of the mill is 150 tons of finished products, and that the addition of a second unit of similar capacity is planned. They estimated that the annual requirements of raw materials and supplies for the single unit would be 120,000 cords (300,000 tons) of pulpwood, of which 30 percent could advantageously be received by barge; 420,000 barrels of fuel oil (about 64,000 tons) 12,000 tons of lime, 9,000 tons of salt cake, and 1,800 tons of alum and rosin size, all of which would move by water from Jacksonville. They stated that their traffic department was making studies of routes to permit receipt by barge of glue, dextrine, starch, tapioca, dvestuffs, twine, and other miscellaneous mill and replacement materials. They estimated that they would ship an average of 100 tons of finished products daily by barge to Jacksonville for movement by steamers thence to northern cities. According to officials of the corporation, the requirements and output of the mill would be about doubled with the addition of the second unit.

20. Officials of the paper corporation, towboat operators, suppliers of fuel oil, bridge tenders, and other local interests near Rice Creek were consulted at different times from the date of the hearing to December 1948 to obtain information and to determine and verify the scope and extent of improvements best suited to the needs of prospective navigation.

COMMERCE

21. *Past and present.*—Prior to 1947, commerce on Rice Creek consisted of rafted logs, a few recreational fishing boats, and a few out-bound barges of pulpwood from near the highway bridge to a paper mill at Fernandina, Fla., about 100 miles northward, and some in-bound construction equipment. No records of tonnages are available.

The paper mill on Rice Creek began operations on November 3, 1947; by November 1948 no pulpwood had been barged to the mill. Fuel oil is barged to the mill, however; records of monthly movements, furnished by the fuel-oil supplier, are as follows:

Month	Barrels	Tons ¹	Month	Barrels	Tons ¹
June 1947.....	6,991	1,059	June 1948.....	11,090	1,680
September 1947.....	3,564	540	July 1948.....	14,103	2,137
October 1947.....	8,360	1,267	August 1948.....	11,069	1,677
December 1947.....	14,800	2,242	September 1948.....	18,684	2,831
January 1948.....	8,790	1,332	October 1948.....	14,747	2,234
February 1948.....	11,250	1,705	November 1948.....	14,045	2,128
March 1948.....	14,339	2,173			
April 1948.....	13,757	2,084	Total.....	187,728	28,443
May 1948.....	22,139	3,354			

¹ Based on 6.6 barrels a ton.

22. *Prospective*.—Foreseeable commerce on Rice Creek would move to or from the paper mill and would consist principally of in-bound pulpwood from points along St. Johns River south of Black Creek, about 27 miles north of Palatka, and fuel oil from Jacksonville. Officials of the mill state that no arrangements have been made for barging finished products. In the estimates of savings for waterway movement, the unit costs of barge transport are based largely on information obtained from contract carriers.

23. *Pulpwood*.—From publications of the State Department of Agriculture and the Florida Forest and Park Service, existing stands of pulpwood timber in the tributary area are estimated at about 4,000,000 cords. Vast stands of the timber are easily accessible to land carriers, and are within economical hauling distance of the mill by such carriers. On the other hand, vast timber stands along the St. Johns River and some of its tributaries are within economical hauling distance of the mill only by water carriers, if Rice Creek be improved to afford access by suitable barges. All pulpwood receipts at the mill are by truck and rail, and, pending improvement of the creek for safe and convenient navigation by large barges, the corporation expects its receipts to continue by land carriers except in cases of emergency, when barging may be employed to prevent stockpiles getting too low.

24. Officials of the paper mill have estimated subsequent to the public hearing that the annual consumption of pulpwood by the present unit is 130,000 cords—325,000 tons on the basis of 2.5 tons a cord. Some pulpwood will probably be barged to the mill without extensive improvement of Rice Creek; however, after a reasonable allowance for such movements it is estimated that about 20 percent of the annual requirements, 65,000 tons, would be barged to the mill if Rice Creek were navigable by large barges. This is considered reasonable when compared with an average of about 50,000 tons of pulpwood barged annually during 1945–46 from points in the area to a paper mill at Fernandina, which is about 105 miles north of Palatka. The estimated average unit saving in transportation costs by water versus rail, the cheapest alternative mode of transport, is \$0.28 a ton, and the estimated average annual saving is \$18,200.

25. In arriving at the unit saving, the costs of trucking to both rail and water assembly points, including loading and unloading,

were assumed to be about equal. The costs by rail were based on current intrastate freight-tariff rates from nearest available rail sidings in the producing sections, and the costs by water were computed on a loaded-ton-mile basis as shown in table 2.

TABLE 2.—Comparative hauls and rates on movement of pulpwood by rail and barge from representative shipping points on or near the St. Johns River to Hudson on Rice Creek, Fla.

[Rates in cents per ton, 2,000 pounds]

To Hudson from—		Rail		Barge		Unit saving by water
County	Shipping point	Miles	Rate ¹	Miles	Rate ²	
Clay	Green Cove Springs	27	66	30	36	30
Putnam	Georgetown ³	28	66	35	42	24
St. Johns	Tocoi ⁴	23	68	20	30	38
Flagler	St. Johns Park ⁵	35	80	40	48	32
Lake	Crows Bluff ⁶	62	84	60	57	27
Volusia	Astor (in Lake County) ⁷	45	72	55	52	20
Seminole	Sanford	76	90	95	67	23
Average		42	75	48	47	28

¹ Tariff authority for rail distances and rates: C. A. Spaninger, agent, ICC Nos. 1054, 1086, and 1095; Robert E. Boyle, Jr., agent, ICC No. 96; Atlantic Coast Line Railroad ICC Nos. B-3170 and B-3177; and Florida East Coast Railway GFO No. 5029-C.

² The estimated barge rates are on the following basis, subject to minimum charge of \$0.30 a ton:

- 40 miles and under, 12 mills a loaded ton-mile.
- 60 miles and over 40, 9.5 mills a loaded ton-mile.
- 80 miles and over 60, 8.5 mills a loaded ton-mile.
- 100 miles and over 80, 7 mills a loaded ton-mile.

³ Rail loading point Crescent City on A. C. L. R. R.

⁴ Rail loading point Elkton on F. E. C. Ry.

⁵ Rail loading point Bunnell on F. E. C. Ry.

⁶ Rail loading point De Land freight agency on A. C. L. R. R.

⁷ Rail loading point Barberville on A. C. L. R. R.

26. *Fuel oil.*—Based on deliveries for the past 12 months, the annual consumption of fuel oil by the mill is about 26,000 tons. The current intrastate rail rate from Jacksonville to Palatka is \$1.32 a ton (C. A. Spaninger, agent ICC Nos. 778 and 1095). The present average cost of barge transport by contract carrier from Jacksonville to the mill (about 55 miles) is about \$1 a ton. Based on information obtained from the water carrier, it is estimated that fuel oil could be barged to the mill for about \$0.80 a ton if the creek were improved, as it would then permit use of two large barges carrying about 850 tons a trip instead of two small barges carrying about 600 tons as at present, and would eliminate the delays now experienced due to difficulties in navigating the stream. On this basis, the unit saving in transportation costs by water would be \$0.20 a ton—an annual saving on 26,000 tons of \$5,200.

27. *Potential commerce.*—In addition to the prospective commerce for which transportation savings can be estimated, there is considerable potential commerce, the movement of which is so uncertain that any estimate of savings at this time would be speculative. These potential movements and the circumstances which preclude estimates of savings at this time are described in subsequent paragraphs.

28. *Lime.*—The estimated annual consumption of lime at the paper mill is 12,000 tons. The management has been attempting to obtain a cheap and dependable source of suitable oystershell and have it barged to the mill for processing into lime. So far all efforts have been unsuccessful, and all lime is received by rail from Alabama. In past

years, a paper mill at Jacksonville made some lime from shell, but reports that the venture was abandoned because the local shell did not produce lime suited to paper manufacture. This mill and the one at Fernandina both now receive all lime by rail, principally from Alabama.

29. *Salt cake*.—Prior to the late war, substantially all salt cake used by paper mills in southern territory was imported from Germany. Since discontinuance of imports, supplies have been obtained principally from producing points in Louisiana and Virginia. Importations may eventually be resumed; salt cake could then be brought in to the port of Jacksonville. If so, the tonnage could probably be transported from that port to the mill more economically by barge than by rail or truck. Recent estimates of the annual consumption of salt cake is about 12,000 tons.

30. *Glue*.—It is estimated that about 5,000 tons of glue will be used annually in the manufacture of gummed tape. Glue is now received by rail from New York and Philadelphia. When coastwise steamship service is resumed between Jacksonville and North Atlantic ports, this tonnage probably could be transported more economically via the water route.

31. *Alum and rosin size*.—The mill uses about 2,000 tons a year of these commodities. The tonnage now moves by rail from Jacksonville and Brunswick, Ga. When common-carrier boat or barge service is resumed between those ports and points on the St. Johns River, it is probable that the water route will be used for the shipments.

32. *Wood-pulp products*.—The mill is producing daily about 168 tons of gummed tape, paper bags, and wrapping paper. This tonnage is now being shipped by rail principally to New York and Philadelphia for distribution. When coastwise vessel service is resumed, the management contemplates barging the finished products to Jacksonville for transshipment coastwise. It is estimated that annual shipments of about 30,000 tons would be forwarded via the water route.

VESSEL TRAFFIC

33. Records of openings of the Atlantic Coast Line Railroad bridge spanning Rice Creek furnish an indication of vessel traffic on the stream. During the past 10 years the bridge was opened 443 times for passage of vessels, including tugs, barges, and recreational craft. The openings by years are given in table 3.

TABLE 3.—Vessel traffic as indicated by railroad bridge openings

Openings		Openings	
1938.....	77	1944.....	34
1939.....	44	1945.....	30
1940.....	96	1946.....	46
1941.....	33	1947.....	66
1942.....	9		
1943.....	8	Total.....	443

During 1947, 17 round trips were made by tugs and barges of about 6- to 8-foot draft carrying principally fuel oil, and 16 round trips were made by small fishing, recreational, and Government craft. The oil barges were about 31 feet wide and the tugs 12 to 16 feet wide. The largest tow consisted of one 80-foot and one 120-foot

barge towed by a tug 65 feet long. Prospective use of the creek after provision of the improvement requested would be by tows of two barges about 35 feet wide and 160 feet long drawing between 8 and 10 feet, each towed by a tug 12 to 16 feet wide, 65 to 75 feet long, and drawing from 8 to 10 feet.

DIFFICULTIES ATTENDING NAVIGATION

34. Controlling depth of about 6.6 feet over the bar, maximum horizontal clearance of 32 feet through the railroad bridge, and very sharp bends adjacent to the highway bridge restrict use of the creek to small and shallow-draft barges. The present horizontal clearances through the railroad drawspan are accentuated by an unparallel fender system and the two sharp turns in the reach between the railroad and highway bridges (about 1,000 feet). A sharp horseshoe bend, crossed by the highway bridge, compels both up-bound and down-bound craft to make sharp turns within about 200 feet of the bridge. Barge tows which exceed 200 feet in length experience considerable difficulty in navigating the bends, especially that to the west, where loaded barges sometimes run aground on a protruding finger shoal. Immediately upstream from its junction with Etonia Creek, Rice Creek narrows to about 80 feet and is partially obstructed by logs, overhanging trees, and debris along its winding course to the mouth of the paper-mill channel. Heavy concentrations of water hyacinths during about 2 months of each year slow down navigation along the creek and sometimes form wedges between barges and the bridge fenders. Present hyacinth-control measures alleviate this condition to a great extent. There are recent reports of some damages to oil barges from striking the fender system at the railroad bridge; the fenders have been severely damaged. Provision of the improvement requested would largely eliminate the difficulties now experienced.

WATER POWER AND OTHER SPECIAL SUBJECTS

35. It would be impracticable to coordinate the improvements desired with projects for water power or flood control. No questions of water supply, irrigation, or the conservation of water resources are involved.

36. On July 17, 1948, the Florida State Board of Health transmitted a report on pollution survey to the Hudson Pulp & Paper Corp. in which it concludes that Rice Creek and the lower reaches of Little Rice Creek and Etonia Creek are polluted; that fishes are being killed in the polluted areas; and that responsibility for the pollution has been traced to the paper mill. The board of health recommends specific corrective measures and, from a public health aspect, urges the corporation to make substantial modifications in processing routines, and that these be made before the St. Johns River becomes polluted by increasing contamination in Rice Creek. The interest of other agencies in the pollution question is discussed in paragraphs 57 and 58. Detailed information is contained in appendix B.¹

¹ Not printed.

PLAN OF IMPROVEMENT

37. In selecting the most practicable plan, consideration was given to all requests and suggestions of local interests. Alternative alignments were investigated, including a cut-off across a land point north of the highway bridge to eliminate a sharp bend, and a cut-off west of the highway bridge to provide a better navigation approach to the bridge. In selecting channel dimensions, and alignment through bridges, towboat captains and others were consulted as to the minimum requirements for reasonable safety and convenience by the type of tows expected to use the waterway, consideration being given to economy of maintenance.

38. Widening the stream at the south land point between the bridges and providing a cut-off across the land point west of the highway bridge would meet the basic needs of present and prospective commerce, and would permit full realization of the estimated benefits. A cut-off across the land point north of the highway bridge would afford a more desirable channel alignment, but would necessitate the construction of an additional highway bridge at a cost incommensurate with the additional benefits to be realized.

39. The plan of improvement provides for a channel 12 feet deep plus 1-foot overdepth, 100 feet wide from beacon 64 in the St. Johns River to the mouth of Rice Creek, and thence 75 feet wide to the access channel of the Hudson Pulp & Paper Corp., except through the railroad bridge, where the horizontal clearances could be increased to about 38 feet through both draws, and through the highway bridge where existing widths of 41.7 and 41.0 feet through the right and left draws, respectively, would be retained. A widened approach would be provided at the south land point between the bridges to accommodate tows 400 feet long; a cut-off would be made across the land point west of the highway bridge; and necessary straightening, widening, and snagging would be done at other places. Some low-value privately owned swamp lands would be required for rights-of-way and spoil-disposal areas; the acquisition of these would involve some land severance. The plan is indicated on the accompanying map.

AIDS TO NAVIGATION

40. The estimated costs of aids to navigation were furnished by the commander, Seventh Coast Guard District, Miami, Fla., and are based on types and locations selected by him and concurred in by the district engineer.

SHORE-LINE CHANGES

41. The plan of improvement would have no adverse effect on existing shore lines.

ESTIMATES OF FIRST COST

42. Dredging quantities are based on side slopes of 1 on 3 with 1-foot allowable overdepth. Unit costs are based on present prices and on current operating costs of plant suited to the work. Non-Federal costs of lands for rights-of-way and spoil-disposal areas, all over practically worthless swampland along the creek, are based on appraised values plus the estimated costs of acquisition and an

allowance for severance. The estimated first costs of the improvements, including about 25 percent for engineering, overhead, and contingencies, are summarized in table 4. Detailed estimates are contained in appendix A.¹

ESTIMATES OF ANNUAL CHARGES

TABLE 4.—*Estimates of first cost*

Clearing (12 acres), snagging, and dredging (236,000 cubic yards) by Corps of Engineers and local interests.....	\$136,300
Estimated first cost of construction.....	136,300
Aids to navigation by Coast Guard.....	1,800
Lands for rights-of-way and spoil-disposal areas by local interests.....	1,050
Estimated total first cost.....	139,150

43. The estimated annual charges for the improvements are summarized in table 5. Detailed estimates are contained in appendix A.¹

TABLE 5.—*Estimates of annual charges*

ESTIMATES OF BENEFITS

Federal investment:	
½ total estimated cost of construction by Corps of Engineers (par. 51).....	\$68,150
Aids to navigation by Coast Guard.....	1,800
Net Federal investment.....	69,950
Federal annual charges:	
Interest at 3 percent.....	2,098
Amortization (50-year life).....	620
Estimated average annual cost of maintenance.....	850
Total Federal annual charges.....	3,568
Non-Federal investment:	
Funds to be contributed for expenditure by Corps of Engineers (50 percent of total estimated cost of construction).....	68,150
Lands and rights-of-way.....	1,050
Net non-Federal investment.....	69,200
Non-Federal annual charges:	
Interest at 3½ percent.....	2,422
Amortization (50-year life).....	528
Allowance for loss of taxes on lands transferred to Federal ownership.....	12
Total non-Federal annual charges.....	2,962
Total annual charges.....	6,530

ESTIMATES OF BENEFITS

44. In estimating the benefits, information was obtained from officials of the Hudson Pulp & Paper Corp., oil companies, towboat operators, and others as to the requirements and production of the paper mill on Rice Creek, origin and destination of various commodities, and transportation charges. The information was checked by

¹ Not printed.

field inspections and office studies, and was supplemented by information on other paper mills in the general locality. The probable benefits were taken as the difference between the lowest present transportation charges and the estimated transportation charges by water with Rice Creek improved.

45. The principal benefits to which a monetary value can be assigned at this time would be those previously estimated from use of the waterway in delivering fuel oil and pulpwood to the mill, as follows:

Annual saving on 65,000 tons of pulpwood (par. 24)	\$18, 200
Annual saving on 26,000 tons of fuel oil (par. 26)	5, 200
Total	23, 400

These tonnages and savings would be about doubled if and when the corporation provides its second unit. The estimated saving on pulpwood is based on the use of barges of about 425-ton capacity, the minimum in which the commerce could be moved most economically. Only small tugs and barges can navigate the creek in its present condition, and then at considerable inconvenience and hazard of damage to floating plant and loss of cargo.

COMPARISON OF BENEFITS AND COSTS

46. The estimated annual benefits are \$23,400, the estimated annual charges \$6,530, resulting in a benefit-cost ratio of 3.58. On the basis of evaluated benefits, the improvement is justified by a wide margin.

47. In evaluating the annual benefits, no credit was taken for potential in-bound water movements of lime, salt cake, glue, alum, and rosin size, or out-bound finished paper and other wood-pulp products. Improvement of Rice Creek would likely contribute to future development of new waterway movements of those commodities destined to or from the paper mill. Those new movements would be exclusive of increased traffic on the St. Johns River and the Intra-coastal Waterway, Atlantic section; therefore, the saving for the complete water movement would be creditable as a benefit to Rice Creek. The annual transportation savings on that potential commerce would probably outweigh the annual benefits evaluated herein; however, development of the movements is contingent on circumstances such that evaluation of the benefits at this time would be conjectural. No credit for commerce not directly connected with the paper mill is claimed or foreseeable at this time.

PROPOSED LOCAL COOPERATION

48. All foreseeable commerce on Rice Creek would be destined to or from the paper mill; therefore, a major part of the benefits from the improvement would be local, accruing mostly to the corporation. Savings in transportation charges on delivery of fuel oil by contract water carrier would accrue to the corporation through lower bid prices by the carriers. Other in-bound raw materials and out-bound finished products move by rail or truck. When circumstances permit water-borne movements of most commodities, large additional transportation savings will be realized, mostly by the corporation.

However, the finished products of the mill enter a highly competitive market and any savings in transportation charges would be reflected to some degree in lower selling prices in order to meet competition. Thus, part of the benefits would assume a general aspect, being realized by widely scattered consumers of the finished products.

49. Improvement of Rice Creek would permit exploitation of pulpwood timber in a large area that is inaccessible by rail and truck, or not within economical hauling distance of market by land transport or by small barges that can safely navigate the stream under present conditions. Benefits from this source would accrue primarily to the owners of the timber; however, in some degree they would be general through utilization of natural resources by the public.

50. All commerce to or from Rice Creek would move over the St. Johns River, Fla., Jacksonville to Lake Harney project, thus permitting increased utilization of that waterway, on which large sums of Federal funds have been expended for improvement. When the potential traffic is fully developed, it will contribute materially to commerce on the Intracoastal Waterway, Atlantic section, and will probably develop new waterway movements, all of which would be of both local and general benefit to barge operators, suppliers, and consumers.

51. The nature of the improvement and the degree of local benefits expected as compared with general benefits are such that local interests should furnish, without cost to the United States, as and when required, all lands, easements, rights-of-way, and spoil-disposal areas for the initial work and for subsequent maintenance; hold and save the United States free from damages resulting from the improvement; and make a cash contribution of one-half the first cost of construction by the Corps of Engineers but not to exceed \$68,150.

52. By letter dated February 18, 1948, the resident manager, Hudson Pulp & Paper Corp., stated that when the corporation is advised that the Corps of Engineers will undertake to widen and deepen the entire channel of Rice Creek, that it and/or local interests in Palatka, Fla., will furnish, free of cost to the United States, lands for rights-of-way and spoil-disposal areas and would hold and save the United States free from damages due to construction works and subsequent maintenance.

53. Local officials of the paper corporation were advised as early as March 1948 that most of the benefits from improvement of Rice Creek would accrue to the corporation; therefore, it would be asked to contribute part of the construction cost. By letter dated June 18, 1948, to the resident manager, the plan of improvement and the proposed requirements of local cooperation were explained and a statement invited as to the willingness and ability of the corporation to comply with the proposed requirements; no reply has been received. The views of the corporation regarding the requirements of local cooperation were again solicited by letters dated August 17 and September 21, 1948. On September 22, 1948, the local attorney for the corporation informally expressed the belief that the management would be unwilling to make a cash contribution toward the cost of construction; but no other statement has been received. A definite statement was again requested by telegram dated October 4, 1948, and in a personal interview with the resident manager on November 8, 1948, with no results. In view of the opinion of the local attorney for the

corporation and the failure of the corporation to furnish a statement of either its willingness or unwillingness to bear a part of the cost, it is believed that it would not do so.

ALLOCATION OF COSTS

54. Of the estimated total first cost (\$139,150) of the plan of improvement, \$68,150 would be paid from funds appropriated for expenditure by the Corps of Engineers for dredging; \$68,150 would be contributed by local interests for expenditure by the Corps of Engineers for dredging; \$1,800 would be expended by the Coast Guard; and \$1,050 would be expended by local interests for lands. Of the estimated average annual cost of maintenance (\$850), \$600 would be expended by the Corps of Engineers in maintaining the channel and \$250 would be expended by the Coast Guard in maintaining aids to navigation.

COORDINATION WITH OTHER AGENCIES

55. All State and Federal agencies believed interested were advised of the public hearing; the views of several agencies were invited during the investigations, and several were informed of the status of the report in September 1948. The Governor of Florida was advised, through his designated representative, of the request of local interests. By letter dated April 17, 1947, he stated, through the director, Florida State Improvement Commission:

* * * The State highway bridge carrying Road No. 15, Federal Road 21, over Rice Creek has a swing span providing an opening of 40 feet horizontally, accommodating barges to a width of 32 feet maximum. It is assumed that this bridge is sufficient and that the improvements contemplated will not necessitate changes in the bridge structure.

If the above assumption is correct this improvement will in no way interfere with the State's plan for development. * * *

The Division of Power, Department of the Interior; Bureau of Indian Affairs; United States Forest Service; United States Soil Conservation Service; National Park Service; and Federal Power Commission furnished letters advising of no interest in the studies.

56. At the time of the hearing no objections were made to the improvements requested. On January 16, 1947, a representative of the Florida State Board of Health inquired if the question of waste disposal by the paper mill had been discussed at the hearing. He was advised that it had not, and was furnished a copy of the transcript of public hearing. No further interest was expressed at the time.

57. Shortly after the mill began operations on November 3, 1947, reports began to be received of adverse effects of stream pollution on fish and wildlife. By letters dated December 22, 1947, and February 9, 1948, the designated representative of the Governor of the State of Florida was invited to furnish the views of the State as to whether the paper corporation had complied with all applicable laws and best practices as prescribed by the State regarding disposal of industrial wastes, and to furnish information on possible plans of the State for the highway bridge. The matter was referred by the director, Florida State Improvement Commission, to the Florida State Board of Health, State Road Department, State Geologist, Game and Fresh Water Fish Commission, and trustees, Internal Improvement Fund, requesting that they advise the district engineer direct of any interest

in the questions at issue. A copy of a letter, dated January 5, 1948, from the Florida State Board of Health to the director, Florida State Improvement Commission, was received, stating:

* * * On our part, there is no objection to the barge canal improvement as such. Widening and/or deepening of Rice Creek toward that end, or removal of snags where they exist, will not materially affect the dilution factor of Rice Creek as a receiving body of water, and consequently is of no significance in preserving or maintaining the oxygen balance of the creek or of the St. Johns River, one of the factors of stream pollution with which we are most concerned. * * *

By letter dated February 17, 1948, the State Road Department of Florida advised that it had no plans for reconstructing the highway bridge spanning Rice Creek. By letter, dated February 18, 1948, the game and fresh water fish commission states:

* * * our preliminary investigations indicate that disposal of wastes from the plant of the Hudson Pulp & Paper Corp. has not been carried out as I was assured it would be by the officials of that corporation as early as the spring of 1947. * * * If this letter is the proper place to present a protest against the action of the Hudson Pulp & Paper Corp., this protest is herewith presented. * * *

58. By letters, dated January 26, 1948, and March 2, 1948, the United States Fish and Wildlife Service was invited to express its interest in the report. That agency referred the question of pollution to the United States Public Health Service, which replied on February 12, 1948, furnishing a copy of the letter to the district engineer, that based on the information at hand:

* * * it would be our suggestion that development of Rice Creek navigation be made contingent on the clean-up, or at least definite assurance of the clean-up, of the pollution problem as an activity in the nature of a local contribution to the project. * * *

Subsequent to the Rice Creek pollution survey by the Florida State Board of Health (par. 36), the United States Fish and Wildlife Services advises in a letter, dated August 19, 1948:

* * * This Service has examined the streams in the project area and has found that gross pollution from the Hudson Pulp & Paper Corp. plant on Rice Creek has resulted in serious deterioration of fishery habitat in portions of Rice and Etonia Creeks below the paper mill site and threatens the welfare of fishery resources of the St. Johns River. * * *

This Service has found that the improvement of the channel for navigation purposes in Rice Creek would have no directly detrimental effects of a serious nature on the presently depleted fish or wildlife resources of the stream. Enlargement of the channel, however, might result in a more rapid discharge of the polluting material into St. Johns River, thus increasing the danger of extending the detrimental effects of the pollution into that river. * * *

We are opposed in principle to the expenditure of Federal funds on a project that would benefit an industry which, in turn, is destroying natural resources through its operations. There is reasonable evidence in this case that remedial measures, as recommended in the report of the Florida State Board of Health, would at least alleviate the effects of pollution from the pulp and paper mill in question. We, therefore, recommend that if possible the development of Rice Creek navigation if approved by your agency be made contingent upon adoption by the Hudson Pulp & Paper Corp of the recommendations of the Florida State Board of Health as a local contribution to the project.

59. The leading sponsors, towboat operators, and other interests state that the improvement, together with increased horizontal clearance through the railroad bridge, would meet the needs of present and prospective commerce. The paper corporation has stated that the requirements of local cooperation pertaining to lands and rights-of-way would be met and that the United States would be held free

from damages due to construction works and subsequent maintenance. Despite repeated invitations, the Corporation has failed to express either its willingness or unwillingness to comply with other proposed requirements of local cooperation (par. 53); a local representative has informally expressed the belief that it would be unwilling. The district engineer does not believe that those proposed requirements would be met.

DISCUSSION

60. A shoal in St. Johns River at the mouth of Rice Creek, restrictive horizontal clearance through the Atlantic Coast Line Railroad bridge, and a narrow, winding channel, partially obstructed at places by old piling and debris, limit navigation on the creek to small tugs and barges. Alleviation of the difficulties owing to the railroad bridge does not enter into this report as steps are being taken with a view to accomplishing that by other means. Present navigation on the stream, consisting principally of small oil tows destined to the Hudson Pulp & Paper Corp. mill, has considerable difficulty on both up-bound loaded trips and down-bound empty trips. All foreseeable commerce on the creek will move to or from the paper mill; under present conditions it will probably be limited to the full requirements of fuel oil and to part of the mill's requirements of pulpwood. Improvement of the creek as requested would permit movement of fuel oil in larger barges at considerable savings over present contract prices and would conduce to additional commerce.

61. The most practicable and economical plan for providing an adequate navigation channel in Rice Creek is as described in the plan of improvement (par. 39). Provision of the improvement, together with increased horizontal clearance through the railroad bridge, would permit full realization of benefits. A cut-off north of the highway bridge would afford a better channel alinement, but would involve a new bridge and would more than double the cost of the improvement with no increase in benefits.

62. The estimated first cost of the improvement, including \$1,800 for aids to navigation and \$1,050 for lands, is \$139,150. The estimated annual charges, including \$850 for maintenance, are \$6,530. The annual benefits that can be evaluated at this time are estimated at \$23,400, resulting in a benefit-cost ratio of 3.58. The evaluated benefits represent the transportation savings on prospective commerce. In addition there is much potential commerce on which the savings will probably outweigh the benefits evaluated herein when circumstances permit water transport.

63. The benefits from the improvement would be largely local, accruing mostly to the Hudson Pulp & Paper Corp. However, in order to meet competition, part of those benefits would be passed on to widely scattered consumers through lower selling prices of finished products. Part of the benefits will accrue to local owners of pulpwood timber that cannot be economically marketed by land transport or by the small barges that can safely and conveniently navigate Rice Creek in its present condition. To some degree these benefits would be general, permitting utilization of natural resources by the public. All commerce to or from an improved Rice Creek would move over the St. Johns River, Fla., Jacksonville to Lake Harney project, and to some extent over the Intracoastal Waterway, Atlantic

section; new waterway movements would probably be developed, with benefits both local and general.

64. The nature of the improvement and the degree of local benefits compared with general benefits are such that local interests should (1) furnish, without cost to the United States, as and when required, all lands, easements, rights-of-way, and spoil-disposal areas for the initial work and for subsequent maintenance; (2) hold and save the United States free from damages during and after construction; and (3) contribute one-half the first cost of construction, not to exceed \$68,150.

CONCLUSIONS

65. The district engineer concludes that the most suitable means of providing for navigation on Rice Creek is as described previously in the plan of improvement; that the nature of the plan and large proportion of local benefits are such that local interests should contribute one-half the estimated cost of construction, not to exceed \$68,150, and cooperate otherwise; that since local interests, despite repeated solicitations, have not indicated that they are willing to contribute any part of the cost of construction, they cannot be expected to do so; and that Federal provision of the improvement is not justified on the basis of general benefits alone.

RECOMMENDATION

66. The district engineer recommends that the United States undertake no improvement of Rice Creek, Putnam County, Fla., at this time.

WILLIS E. TEALE,
Colonel, Corps of Engineers,
District Engineer.

[First endorsement]

OFFICE, DIVISION ENGINEER,
SOUTH ATLANTIC DIVISION,
Atlanta, Ga., December 14, 1949.

To: The Chief of Engineers, United States Army, Washington, D. C.

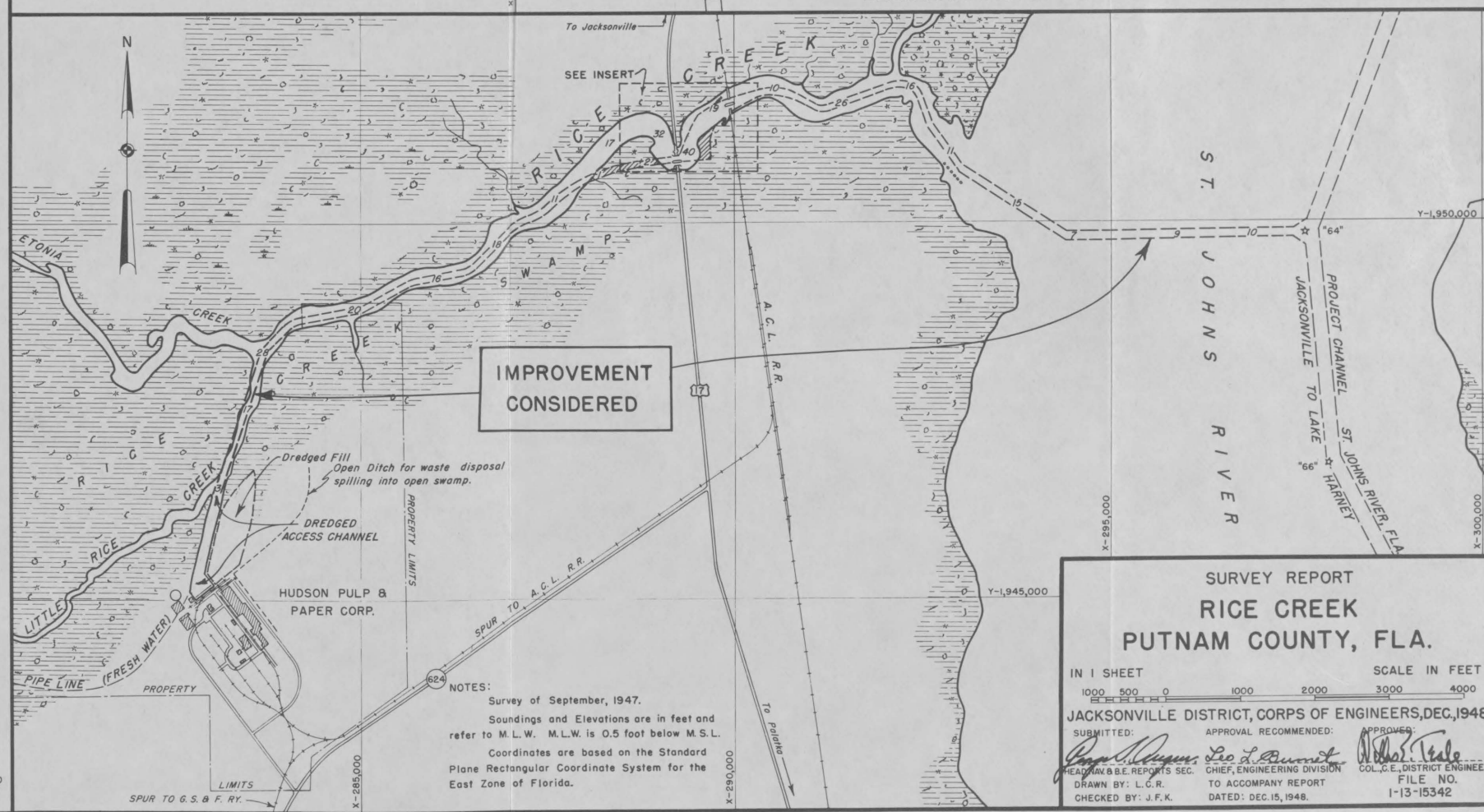
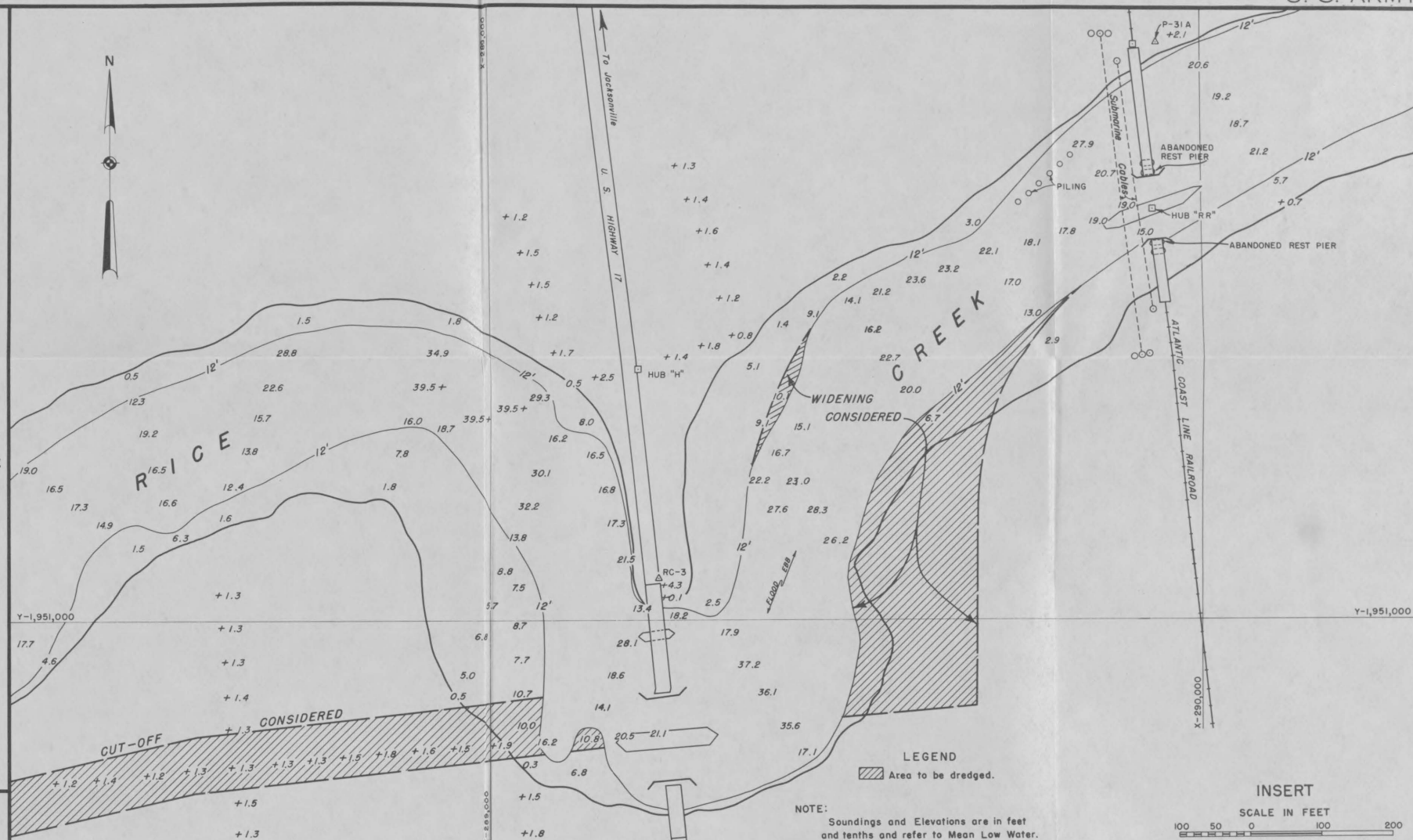
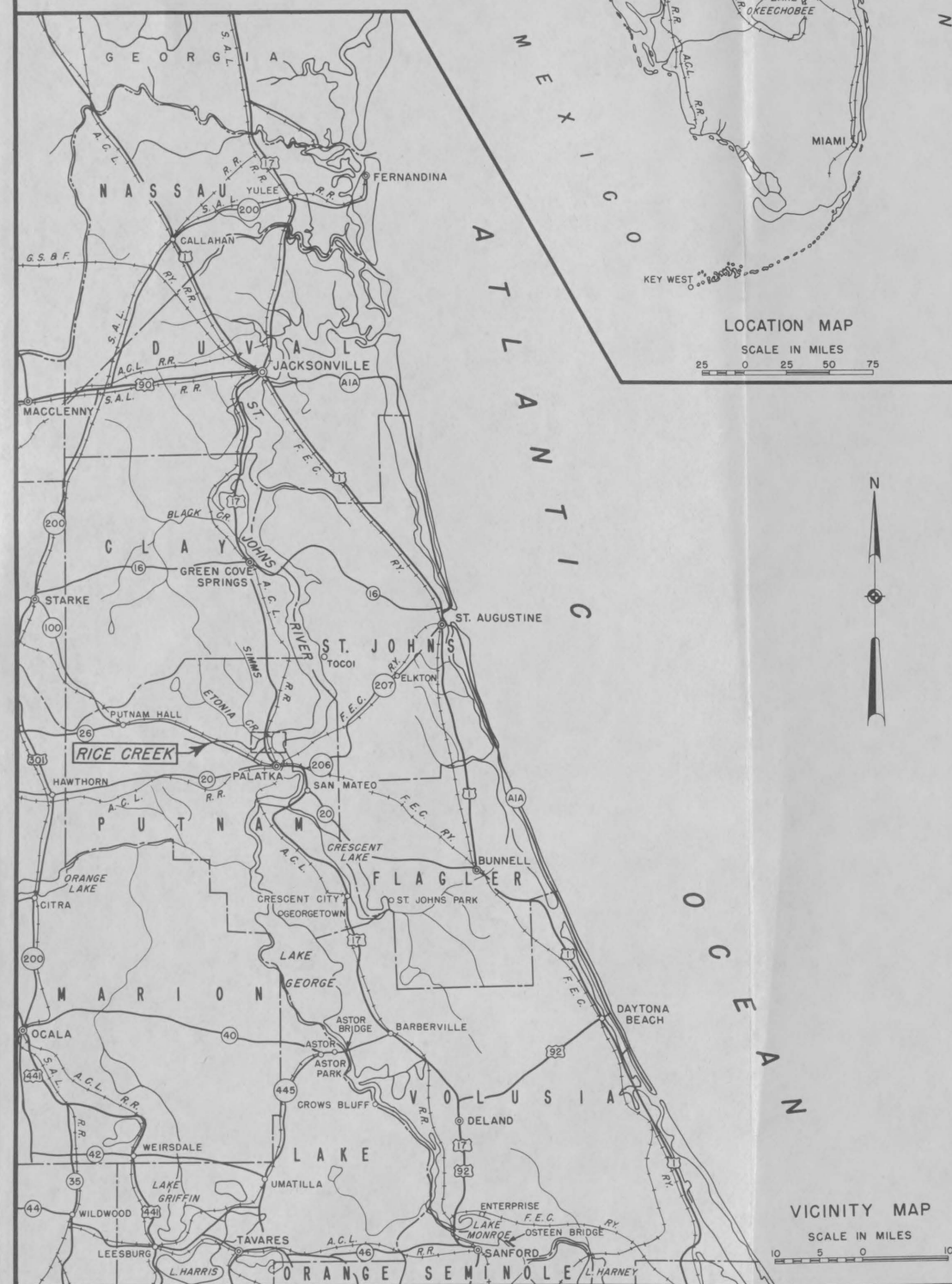
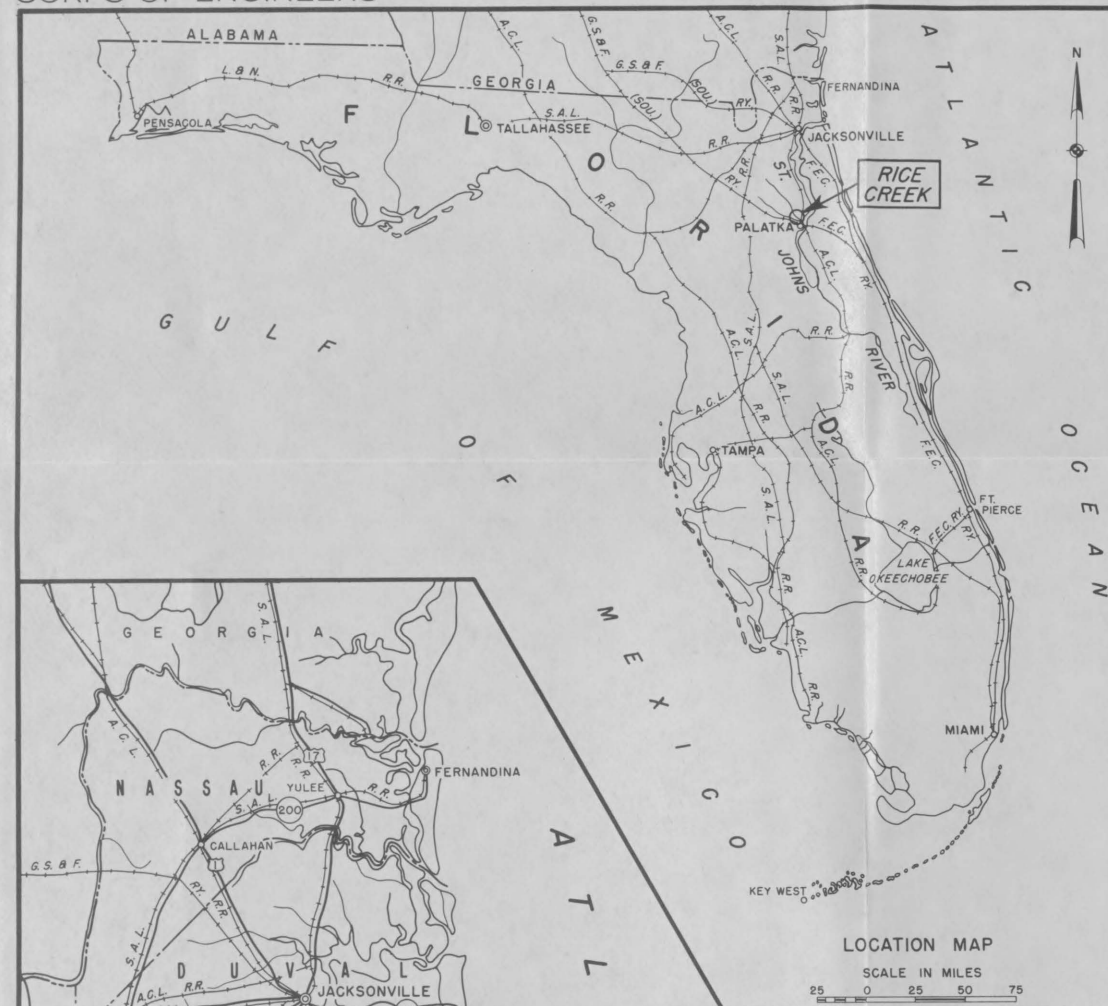
The division engineer concurs in the recommendation of the district engineer.

B. L. ROBINSON,
Colonel, Corps of Engineers,
Division Engineer.

LIST OF APPENDICES MADE IN CONNECTION WITH THE REPORT OF THE DISTRICT ENGINEER

(Not printed)

- A. Estimates of first costs and annual charges.
- B. Coordination with other agencies.



SURVEY REPORT
RICE CREEK
PUTNAM COUNTY, FLA.

IN 1 SHEET
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS, DEC. 1948
SUBMITTED: [Signature]
APPROVAL RECOMMENDED: [Signature]
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